REMARKS

In response to the Official Action mailed May 21, 2004, Applicants amend their application and request reconsideration. In this Amendment, claims 33-37 are added and claims 1, 20-22, and 31 are canceled so that claims 2-19, 23-30, and 32-37 are now pending. No new matter has been added.

Claim 5 is amended to include the limitations of claim 6. Claims 1, 6, 20-22, and 31 are canceled without prejudice.

The Examiner refused to consider the Information Disclosure Statement because the non-patent publication cited lacked publication information. There was no explanation as to why the Examiner refused to consider JP 7-295612 that was submitted in the same Information Disclosure Statement. The publication information was complete for that publication and an English language abstract was supplied. An indication of consideration of that patent publication in the next communication is respectfully requested.

Moreover, the non-patent publication is published on the Internet at http://www.microshadow.com/english/ladrwork.htm. This is the only publication information available for the non-patent publication. An indication of consideration of this non-patent publication in the next communication is respectfully requested.

The Official Action asserts that the declaration is defective. A new declaration, in full compliance with 37 C.F.R. § 1.64(a), is supplied with this Amendment.

The Official Action notes that the Preliminary Amendment erroneously replaced the paragraph beginning at page 4, line 20 with an amended version of the paragraph beginning at page 4, line 11. Accordingly, in this Amendment the paragraph beginning at page 4, line 11 is replaced with an amended version of that paragraph. The paragraph beginning at page 4, line 20 is replaced with the text originally appearing in that paragraph before the Preliminary Amendment.

The Official Action notes that Applicants' amendments to the Abstract in the Preliminary Amendment have not been entered because they are not in compliance with 37 C.F.R. § 1.121. It would be helpful if the Official Action would explain why the amendments to the Abstract allegedly do not comply with 37 C.F.R. § 1.121. Applicants respectfully submit that the amendments to the Abstract in the Preliminary Amendment are in full compliance with 37 C.F.R. § 1.121. Accordingly, the amendments should be entered. To ensure full compliance with 37 C.F.R. § 1.72, the Abstract, as amended, commencing on a separate sheet is provided with this Amendment for the Examiner's convenience.

The Official Action objects to claim 9 as containing informalities. Those informalities have been corrected by this Amendment.

The Official Action objects to claim 17 for containing informalities. That objection is traversed. The Official Action contends that a capitalized "Is" appears in line 5 of claim 17. Applicants note that a capitalized "Is" appears neither in the original claim 17 (see page 98 of the patent application) nor in requested amendment of claim 17 in the Preliminary Amendment (see page 10 of the Preliminary Amendment). Accordingly, there is no informality to correct. Applicants further note that the section entitled "Claims Pending After Preliminary Amendment" was not required and was provided merely for the Examiner's convenience. That section is not part of the request to enter amendments, and thus has no controlling effect over the amendments.

The Official Action rejects claims 1-4, 6, 13-19, and 25-32 under 35 U.S.C. § 112, first paragraph, as failing to comply with the enablement requirement. That rejection is moot in view of the present Amendment. The Official Action contends that the phrases "universal microprocessor" is not defined by the specification. Accordingly, the term "universal" has been deleted from all occurrences of the phrase "universal microprocessor."

The Official Action rejects claims 1-19 and 22-32 under 35 U.S.C. § 112, second paragraph, as indefinite. That objection is moot in view of the present Amendment. The Official Action asserts that the phrase "such as" renders the claims indefinite because it is unclear whether the limitations following the phrase are part of the claimed invention. Accordingly, all occurrences of the phrase "such as" have been deleted from the claims, along with the limitations in any clause beginning with that phrase. The newly added claims compensate for five of these amendments and are supported by the original claim language that is now deleted.

The Official Action further asserts that the terms "advanced programming language" and "advanced language" are indefinite. Accordingly, all occurrences of the term "advanced" have been replaced with the term "high-level." As noted by the Official Action, the specification discloses C as an advanced programming language suitable for use in the invention. Applicants further note that one of ordinary skill in the field of computer programming languages will recognize that C is one of many high-level programming languages. High-level programming languages enable a programmer to write programs that are independent of a particular type of computer. Such languages are considered high-level because they are closer to human languages and further from machine languages. An attached explanation from Webopedia supports this common knowledge in the computer

arts. Thus, the specification supports this amendment. Accordingly, the rejection should be withdrawn.

The Official Action rejects claim 1 as anticipated by Palermo et al. (US Patent 5,594,917). That rejection is moot in view of the cancellation of claim 1.

The Official Action rejects claims 1, 2, 4-9, 11-16, 18, 21, 22, 25-27 and 31 as anticipated by Kim et al. ("A Translation Method of Ladder Diagram on PLC with Application to a Manufacturing Process," hereinafter Kim). The rejection of claims 2, 4-9, 11-16, 18, and 25-27 is traversed. The rejection of claims 1, 21, 22, and 31 are moot in view of their cancellation.

The rejection of claims 2, 4-9, 11-16, 18, and 25-27 is generally traversed on the grounds that the rejection is not articulated. Title 37, Section 1.104(c)(2) of the Code of Federal Regulations specifies that "[w]hen a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable. The pertinence of each reference, if not apparent, must be clearly explained and each rejected claim specified." Furthermore, Section 706 of the MPEP states that "[t]he goal of examination is to clearly articulate any rejection early in the prosecution process so that the applicant has the opportunity to provide evidence of patentability and otherwise reply completely at the earliest opportunity." In rejecting each claim, the Official Action merely repeats the claim limitations, and cites a general section of the reference (e.g., section 3, pp. 2-4). The Official Action does not describe the pertinence of those sections, such as how the claim reads on the reference. Applicants will elaborate with respect to each claim.

Regarding amended independent claim 2, the Official Action does not articulate what it regards to be the acceleration unit in Kim. In fact, Kim does not teach an acceleration unit as specifically defined by the patent application, or even at all. Accordingly, Kim fails to teach all of the limitations of claim 2, and the rejection should be withdrawn.

Regarding amended independent claim 5, Kim fails to teach an acceleration unit. See the discussion of claim 2.

Regarding amended independent claim 12, the Official Action does not articulate how Kim teaches a control-program converting unit which converts at least some of the blocks into high-level-language control programs described with a universal-computer-readable high-level language for every block. In fact, Kim teaches converting a ladder diagram application to assembly code, which one of ordinary skill in art will recognize is not a high-level language (see page 3, line 23-24 ("The macro complier...") and Figure 5

of Kim). Moreover, Kim teaches away from the advantage of the present invention, which is that sequential control programs are converted to high-level language (e.g., C) applications, which are easier to modularize and update. Accordingly, Kim fails to teach all of the limitations of claim 12, and the rejection should be withdrawn.

Regarding amended independent claim 25, Kim fails to teach an acceleration unit. See the discussion of claim 2.

Regarding amended independent claims 26 and 27, Kim fails to teach an acceleration unit and converting blocks to a high-level language. See the discussion of claims 2 and 12.

Regarding amended dependent claims 4 and 11, the Official Action fails to articulate how Kim teaches a processing-time rough-estimating unit which has a relating table. In fact, Kim teaches measuring the actual time of program execution, not an estimation of program time execution (see Equation 2 of Kim and surrounding discussion). Moreover, Kim says absolutely nothing about a table of any kind. The Official Action asserts that the use of underlying apparatus components is inherent in determining the execution times of the modified programs. However, "[t]o establish inherency, the extrinsic evidence 'must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.' " *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citations omitted). "In relying upon the theory of inherency, the examiner must provide a basis in fact and/or technical reasoning to reasonably support the determination that the allegedly inherent characteristic necessarily flows from the teachings of the applied prior art." *Ex parte Levy,* 17 USPQ2d 1461, 1464 (Bd. Pat. App. & Inter. 1990) (emphasis in original). The rejection based on inherency is deficient and therefore erroneous because the Official Action does not provide technical reasoning supporting a determination that the allegedly inherent characteristics necessarily flow from the teachings of Kim. Accordingly, the rejection should be withdrawn.

Regarding amended dependent claim 13, Kim fails to teach an acceleration unit. See the discussion of claim 2.

Regarding dependent claims 7 and 14, the Official Action fails to articulate how Kim teaches a control-program dividing unit that divides the control program into a plurality of blocks *at a predetermined rung in the ladder diagram* to generate a program

file for every block. Kim, in fact, says absolutely nothing about dividing at a predetermined rung. Thus, Kim fails to teach all of the limitations of claims 7 and 14. Accordingly, the rejection is erroneous and should be withdrawn.

Regarding dependent claims 8 and 15, the Official Action fails to articulate how Kim teaches a control-program dividing unit dividing the control program into a plurality of blocks at a *predetermined rung*, serving as a *jump destination for a jump instruction* in the ladder diagram, to generate a program file for every block. As previously noted, Kim says absolutely nothing about dividing at a predetermined rung. Moreover, Kim says absolutely nothing about a jump destination, jump instruction, or a predetermined rung serving as a jump destination. Thus, Kim fails to teach all of the limitations of claims 8 and 15. Accordingly, the rejection is erroneous and should be withdrawn.

Regarding dependent claims 9 and 16, the Official Action fails to articulate how Kim teaches a control-program dividing unit that extracts at least some rungs *including instructions to a common input or output device* from the ladder diagram. In fact, Kim discloses nothing resembling a rung that includes instructions to a common input or output device. Thus, Kim fails to teach all of the limitations of claims 9 and 16. Accordingly, the rejection is erroneous and should be withdrawn.

Applicants respectfully request that any future rejection of the claims be fully articulated, including a detailed explanation as to how the cited reference(s) teaches every element of every claim limitation.

The Official Action rejects claims 3, 10, and 17 as unpatentable over Kim in view of Aho et al. ("Compilers: Principles, Techniques, and Tools," hereinafter Aho). That rejection is respectfully traversed.

The rejection of claims 3, 10, and 17 relies on the assertion that Kim teaches the limitations of claims 2, 5, and 12. As previously explained, that assertion is false. Furthermore, Aho fails to teach those limitations of claims 2, 5, and 12 that are absent in Kim. Accordingly, the combination of Kim and Aho cannot teach or suggest all of the limitations of claims 3, 10, and 17. Thus, *prima facie* obviousness has not been established. Accordingly, the rejection is erroneous and should be withdrawn.

The Official Action rejects claims 19 and 28 as unpatentable over Kim in view of Rosenberg ("How Debuggers Work: Algorithms, Data Structures, and Architecture"). That rejection is respectfully traversed.

The rejection of claim 19 relies on the assertion that Kim teaches an acceleration unit. As previously explained with regard to claim 2, that assertion is false. The rejection of claim 28 relies on the assertion that Kim teaches conversion to a high-level language.

As previously explained with regard to claim 12, that assertion is false. Furthermore, Rosenberg fails to teach those limitations of claims 19 and 28 that are absent in Kim. Accordingly, the combination of Kim and Rosenberg cannot teach or suggest all of the limitations of claims 19 and 28. Thus, *prima facie* obviousness has not been established. Accordingly, the rejection is erroneous and should be withdrawn.

The Official Action rejects claims 20 and 30 as unpatentable over Kim in view of Baker et al. ("Compressing Differences of Executable Code," hereinafter Baker). That rejection is respectfully traversed with respect to claim 30. The rejection of claim 20 is moot in view of its cancellation.

The rejection of claim 30 relies on the assertion that Kim teaches an acceleration unit. As previously explained with regard to claim 2, that assertion is false. Furthermore, Baker fails to teach those limitations of claim 30 that are absent in Kim. Accordingly, the combination of Kim and Baker cannot teach or suggest all of the limitations of claims 19 and 28. Thus, *prima facie* obviousness has not been established. Accordingly, the rejection is erroneous and should be withdrawn.

Claims 23, 24, 29, and 32 are not rejected based upon prior art and are thus in a form for allowance.

Reconsideration and withdrawal of the rejections, as well as prompt allowance of the pending claims, are earnestly solicited.

Respectfully submitted,

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Date: Nov. 10, 2004

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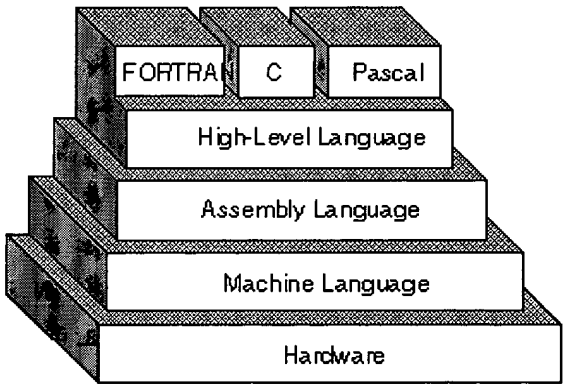
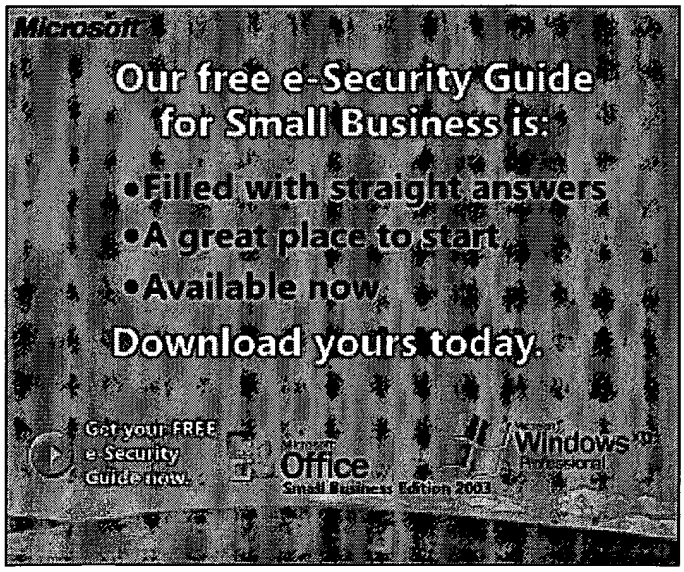


A programming language such as C, FORTRAN, or Pascal that enables a programmer to write programs that are more or less independent of a particular type of computer. Such languages are considered high-level because they are closer to human languages and further from machine languages. In contrast, assembly languages are considered low-level because they are very close to machine languages.



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The main advantage of high-level languages over low-level languages is that they are easier to read, write, and maintain. Ultimately, programs written in a high-level language must be translated into machine language by a compiler or interpreter.

The first high-level programming languages were designed in the 1950s. Now there are dozens of different languages, including Ada, Algol, BASIC, COBOL, C, C++, FORTRAN, LISP, Pascal, and Prolog.

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